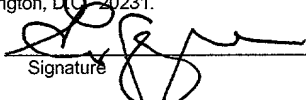


IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	§	Serial No:	To Be Assigned
Richard E. Smalley et al.	§		(division of application
	§		Serial No. 09/380,545)
For: CARBON FIBERS FORMED FROM	§		
SINGLE-WALL CARBON	§	Filed: CONCURRENTLY HEREWITH	
NANOTUBES	§		
	§	Group Art Unit: 1754 (anticipated)	
	§		
Atty Dkt: 11321-P012USD12	§	Prior Examiner: Stuart Henderson	
	§	703.308.2539	

U.S. Patent and Trademark Office
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<u>December 28, 2001</u>	<u></u>
Date	Signature
	<u>Gracie Segovia</u>
	Printed Name

**PRELIMINARY AMENDMENT ACCOMPANYING REQUEST FOR FILING
DIVISIONAL APPLICATION UNDER 37 C.F.R. § 1.53(b)**

Sir:

This paper accompanies a Request for Filing Divisional Application Under 37 C.F.R. § 1.53(b) and associated filing fee therefor ("the Request"). If the fee payment is missing or insufficient in amount, or if any other fees are determined to be due, the Assistant Commissioner, Commissioner, and/or the Director of the U.S. Patent & Trademark Office is/are hereby authorized to charge any such fees (or credit any overpayment) to Winstead Sechrest & Minick Deposit Account No. 23-2426, referencing matter number 11321-P012USD12.

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IN RE: APPLICATION OF SMALLEY ET AL.
PRELIMINARY AMENDMENT ACCOMPANYING REQUEST FOR FILING DIVISIONAL APPLICATION UNDER
37 C.F.R. § 1.53(b)

AMENDMENTS

In the Title

Please amend the title by replacing the present title with the following:

--METHOD FOR PRODUCING A CATALYST SUPPORT AND COMPOSITIONS
THEREOF--

In the Abstract

Please amend the abstract by replacing the present abstract with the following:

-- This invention relates generally to a method for producing single-wall carbon nanotube (SWNT) catalyst supports and compositions thereof. In one embodiment, SWNTs or SWNT structures can be employed as the support material. A transition metal catalyst is added to the SWNT. In a preferred embodiment, the catalyst metal cluster is deposited on the open nanotube end by a docking process that insures optimum location for the subsequent growth reaction. The metal atoms may be subjected to reductive conditions.--

In the Specification

Please amend the specification as noted on page 5, paragraph 11 of the Request by inserting before the first line of the specification the following:

--RELATED APPLICATIONS

This application is a division of co-pending prior U.S. patent application Serial No. 09/380,545, filed on September 3, 1999, entitled "CARBON FIBERS FORMED FROM SINGLE-WALL CARBON NANOTUBES," which is the 35 U.S.C. § 371 national application of International Application Number PCT/US98/04513 filed on March 6, 1998, which designated the United States, claiming priority to: provisional U.S. patent application Serial Number 60/067,325, filed on December 5, 1997; provisional U.S. patent application Serial Number 60/064,531, filed on November 5, 1997; provisional U.S. patent application Serial

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Number 60/063,675, filed on October 29, 1997; provisional U.S. patent application Serial Number 60/055,037, filed on August 8, 1997; provisional U.S. patent application Serial Number 60/047,854, filed on May 29, 1997; and provisional U.S. patent application Serial Number 60/040,152, filed on March 7, 1997. Each of the foregoing applications is commonly assigned to the assignee of the present invention and is hereby incorporated herein by reference in its entirety.

This application discloses subject matter related to the subject matter of U.S. patent application Serial Number 10/000,746, filed on November 30, 2001 in the name of Daniel T. Colbert et al., entitled "MACROSCOPICALLY MANIPULABLE NANOSCALE DEVICES MADE FROM NANOTUBE ASSEMBLIES," which application is commonly assigned to the assignee of the present invention.--

In the Claims

Please amend the claims as follows:

- A. Please cancel claims 1-162 without prejudice or disclaimer to the subject matter thereof.
- B. Please add the following new claims 163-182:
163. (New) A method for producing a catalyst support comprising:
- (a) providing a plurality of single-wall carbon nanotubes;
 - (b) contacting an end of at least some of the single-wall carbon nanotubes of the plurality with at least one catalytic metal, wherein the catalytic metal comprises a Group VI metal; and
 - (c) activating the catalytic metal.
164. (New) The method of claim 163 wherein the Group VI metal is selected from the group consisting of chromium (Cr), molybdenum (Mo), and tungsten (W).
165. (New) The method of claim 163 further comprising removing an end cap from the end of at least some of the single-wall carbon nanotubes.

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166. (New) The method of claim 165 wherein the end caps are removed by an oxidative treatment.
167. (New) The method of claim 166 wherein the oxidative treatment comprises a technique selected from the group consisting of oxidative etching, electrochemical oxidative etching and combinations thereof.
168. (New) The method of claim 166 wherein the oxidative treatment comprises the use of a chemical selected from the group consisting of nitric acid, oxygen, carbon dioxide and combinations thereof.
169. (New) The method of claim 166 wherein the oxidative treatment is conducted at a temperature at at most about 500°C.
170. (New) The method of claim 163 further comprising cutting the single-wall carbon nanotubes.
171. (New) The method of claim 163 wherein the catalytic metal is deposited on the single-wall carbon nanotubes.
172. (New) The method of claim 171 wherein the catalytic metal is deposited by a deposition method selected from the group consisting of deposition of a metal vapor in a vacuum, deposition of pre-formed catalyst particles, deposition of a catalyst precursor and combinations thereof.
173. (New) The method of claim 172 wherein the deposition of the metal vapor is done by heating at least one wire comprising the catalytic metal.
174. (New) The method of claim 172 wherein the catalyst precursor is a substance selected from the group consisting of an oxide, salt, metal complex and combinations thereof.
175. (New) The method of claim 163 wherein the activating of the catalytic metal is by heating.

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176. (New) The method of claim 175 wherein the heating is localized at the ends of the single-wall carbon nanotubes of the plurality.
177. (New) The method of claim 175 wherein the heating is at a temperature in a range between about 500°C and about 1300°C.
178. (New) The method of claim 163 wherein the activating of the catalytic metal produces metal atom clusters comprising from about 10 to about 200 metal atoms.
179. (New) The method of claim 178 wherein the metal atom clusters are located at the ends of the single-wall nanotubes.
180. (New) The method of claim 163 wherein the plurality of single-wall carbon nanotubes is a cross section of a previously-grown fiber.
181. (New) A composition comprising a catalytic metal supported on at least one single-wall carbon nanotube, wherein the catalytic metal is a Group VI metal.
182. ((New)The composition of claim 181 wherein the Group VI metal is selected from the group consisting of chromium (Cr), molybdenum (Mo) and tungsten (W).

REMARKS

A. *Status of the Application.* Claims 1-162 are cancelled herein without prejudice or disclaimer to the subject matter thereof. Additionally, claims 163-182 have also been added herein. No new matter is added by the addition of these claims.

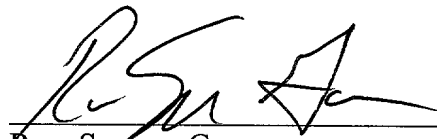
CONCLUSION

It is believed that each of the claims now pending in the present application recites elements neither taught nor suggested by the prior art. Further, it is believed that the application as a whole is in proper form and condition for allowance. If the Examiner believes that the application may be placed in even better condition for allowance, he or she is invited to contact

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the undersigned at the telephone number noted below. Alternatively, or in addition, if the Examiner believes that an Examiner interview would be beneficial, the Examiner is invited to note that the undersigned has ready access to the videoconferencing facilities of the South Central Intellectual Property Partnership at Rice University in Houston, Texas. The inventors and the undersigned would welcome the opportunity to use those facilities to clarify any issues deemed to remain unresolved.

Respectfully submitted,



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Date: December 28, 2001

ATTORNEYS FOR ASSIGNEE

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12/28/2001 - 11321-P012USD12